Clarification of Dissenting Opinion
5. Proposed revision to landing exposure criteria. [Raytheon, Cessna]

Under current FAA/JAA regulation, 25.671(c)(3) allows an applicant to consider a jam is Extremely Improbable, as might be the case should the jam occur in the small time window immediately before landing. The proposed 25.671(c)(3) removes this allowance, but it specifically excludes from the jam evaluation "*... the time immediately before landing where recovery may not be achievable when considering time delays in initiating recovery.*" This delay period, from failure to pilot response, is specified in the Draft AC25.671 Sect. 9.e(1)(iii) as 4 sec. + any system activation time for cases where transfer of control is necessary.

The Draft AC25.671 Sect. 9.e(1)(iii) delay times also apply to mechanical disconnect of pilot control devices covered under 25.671(c)(1). Typical state-of-the-art aircraft employ dual independent, single load path pilot control input devices in the cockpit. As is also the case in the event of a jam, should one pilot control device fail during the time immediately before landing, the airplane is exposed to uncontrolled ground contact during the specified pilot delay and recovery time. This is especially true during a sideslipped approach under crosswind conditions and/or in gusty conditions.

Determination of whether nacelle or wing tip strikes, or nosegear first touchdown at 10+ ft/sec descent rate is catastrophic would be an unnecessary burden placed on the applicant. This determination would also likely be a source of inconsistency between certification agencies and ACO's. This determination and the applicant's alternative of installing dual load path pilot controllers are unwarranted based on the lack of documented safety concerns with the current state-of-the-art design.

It is believed that the failure rate of a single mechanical disconnect in a primary flight control system is similar to that of a flight control jam. Consistency would require that both be excluded from showing CSFL in this small exposure time. Yet, the proposed 25.671(c)(1) does not allow a probability assessment to exclude this disconnect condition or a specific exclusion as in proposed 25.671(c)(3)(ii) for jams.

Applicants have historically not been required to evaluate this type of disconnect failure just before touchdown for FAA certification. Current JAA 25.671(c)(1) would allow an applicant to consider a mechanical disconnect in this small time exposure Extremely Improbable. Continuation of the past FAA certification practice is uncertain under the new proposed 25.671 due to the attention given to this phase of flight for jams in 25.671(c)(3)(ii).

Therefore, it is recommended that the exclusion for jam failures in "*...the time immediately before landing where recovery may not be achievable when considering time delays in initiating recovery*" allowed under proposed 25.671(c)(3)(ii) be extended to single mechanical disconnect failures considered under the proposed 25.671(c)(1) that occur in a similarly narrow time window. It is recognized that this would raise potential for inconsistency with 25.1309. However, expansion of the exceptions in the draft 25.1309 NPRM to exclude both jams covered by 25.671(c)(3) **AND** mechanical disconnects covered by 25.671(c)(1) should address this concern.